

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

In the Matter of)	
)	
Improving Public Safety Communications)	
in the 800 MHz Band)	WT Docket 02-55
)	
Consolidating the 900 MHz Industrial/Land)	
Transportation and Business Pool Channels)	

COMMENTS OF THE CITY
AND COUNTY OF SAN DIEGO

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SUMMARY

Because of the unique Mexican border area issues discussed in previous filings, the CITY and the COUNTY have worked cooperatively with Nextel, APCO, the UTC and members of the 800 MHz User Coalition to arrive at a “San Diego solution.” This solution supports and utilizes elements of the Consensus Plan, the Balanced Approach Plan and specifically developed plans for the CITY and the COUNTY of San Diego.

Simply put, the rebanding plan presented by the Consensus Parties will not work in San Diego. The channels available to public safety in San Diego are 50% fewer than those available in most of the United States.

Several actions need to occur in parallel to make the “San Diego solution” work. First, the FCC must grant frequency exchanges by and between Nextel and the CITY and Nextel and the COUNTY. Second, the FCC must adopt the frequency assignments for mutual aid NPSPAC channels in San Diego that provide the same five national mutual aid channels and the same two State of California mutual aid channels above and below the 110 Km Mexican treaty line. San Diego CITY and COUNTY must have interoperability with agencies responding to emergencies within San Diego COUNTY and visa versa. The CITY and the COUNTY support the technical proposals in Appendix F of the Consensus Plan and encourage the FCC to adopt these rules. The CITY and the COUNTY also support elements of the Balanced Approach Plan and encourage the FCC to adopt a revised version of the plan provided as Attachment 1.

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**COMMENTS OF THE CITY
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The City of San Diego (CITY) and the County of San Diego (COUNTY) hereby file these additional comments to update the Commission on developments since our last intervention in July of 2003. The CITY and the COUNTY have worked cooperatively with several parties participating in this docket to arrive at a workable solution for resolving 800 MHz public safety interference in San Diego. This filing represents a culmination of these efforts and outlines those results. Should this proposed solution be implemented in San Diego, it would result in greatly improved public safety communications for law enforcement, fire EMS and other public safety and public service agencies in the San Diego Region, and greatly reduce the incidents of harmful interference experienced daily by the combined 33,000 users of the CITY and the COUNTY 800 MHz radio networks.

Background

Public Safety agencies use the COUNTY 800 MHz RCS Network and the CITY 800 MHz Radio Network for mission-critical communications needs. The CITY and the COUNTY

require absolute assurance that Nextel will be able to provide interference free channels as part of a frequency exchange. Nextel must assure the CITY and the COUNTY that neither Nextel, nor any Nextel affiliates operating in the United States or Mexico, will cause harmful interference as a result of a frequency exchange or rebanding plan. Most of the foreseeable harmful interference from sources in the United States could be transmitted from high elevation sites in Orange and Riverside Counties. Although interference studies provided to date from Nextel to the CITY and the COUNTY show a reasonable expectation of interference-free operation, actual on-the-air testing may not have the same results. Neither the CITY nor the COUNTY desire, in any frequency exchange with Nextel, to use channels that are within the proposed 0.75 MHz Border Area Guard Band.

Since a teleconference with FCC OET staff members on July 2, 2003,¹ the CITY and the COUNTY have collectively been working toward a “San Diego solution.”² This has included discussions with Nextel, APCO, the 800 MHz User Coalition and other participants in this proceeding. These discussions have confirmed that the rebanding plan as presented will not work in San Diego. Due to some of the unique issues in San Diego, we first looked at the various proposals available to arrive at a specific, workable plan for the CITY and the COUNTY of San Diego. As a result of these discussions and resulting analysis, the following frequency exchange and technical solutions are presented for consideration.

¹ Letter to FCC Secretary from James R. Hobson, July 2, 2003.

² Although we are unable to speak for other affected Mexican and Canadian border areas, we encourage the parties involved to work out specific solutions for FCC consideration.

The Consensus Proposal

In a prior submission,³ the CITY noted that, under the original Consensus Proposal, the San Diego region and other Mexican border jurisdictions would only be able to use half of the spectrum proposed to be reassigned to public safety. The CITY insisted that the border communities be given access to the same quantity of spectrum available to heartland (non-border) jurisdictions. For its part, the COUNTY also called for additional spectrum in the border regions “to compensate for Mexican and Canadian bilateral agreements that give 50% of existing bandwidth to those countries.”⁴ The CITY and the COUNTY concluded that the proposed rebanding plan was unworkable in San Diego.

In September, 2003, the CITY and the COUNTY each met with Lawrence Krevor and Sandy Edwards of Nextel to discuss specific frequency exchanges that would provide a workable rebanding plan for San Diego. At those meetings, Nextel provided a channel plan for the CITY and the COUNTY that would entail the exchange of approximately 17 CITY 800 MHz channels and 143 COUNTY 800 MHz channels. Since that meeting, the CITY and the COUNTY have continued to work with Nextel to develop a frequency exchange plan that will work. Substantial progress has been made in this area, and it appears that this can be accomplished through a frequency exchange agreement.

San Diego CITY Frequency Exchange

As stated in previous filings, The CITY owns and operates a 20-channel, seven simulcast-site Motorola Smartnet Type II trunked analog voice network that began operation in 1992. There are approximately 16,000 users on the network at this time. Based upon research,

³ Comments of the City and County of San Diego, February 10, 2003, 2.

⁴ Comments, May 6, 2002, at 2.

the CITY estimated that the many radios currently in use on the 800 MHz Radio Network were incapable of being upgraded to allow programming to the re-designated channels under the proposed Consensus Plan rebanding. A sample cost analysis for the end-user equipment that will need to be replaced to make a frequency exchange with Nextel is presented in the chart below:

Types and numbers of radios in operation today that do not provide for flashport upgrade⁵

Radio type	Quantity	Estimated Replacement Cost per Radio	Estimated Total Replacement Cost
GTX	96	\$1300	\$124,800
LCS2000	200	\$1100	\$220,000
LTS2000	262	\$1300	\$340,600
MAXTRAC	377	\$1400	\$527,800
MTX820	444	\$1300	\$577,200
SABER SI	1711	\$3700	\$6,330,700
SPECTRA	1689	\$3200	\$5,404,800
STX	4	\$2000	\$8,000
VISAR	380	\$1300	\$494,000
GRAND TOTAL	5,163	N/A	\$14,027,900

In addition, the CITY anticipates that fixed equipment including antennas and combiners may need to be replaced as a result of the frequency exchange.

San Diego County Frequency Exchange

The COUNTY currently has 98 NPSPAC channels in use and 45 public safety 806 MHz channels in use that require reassignment as a result of the proposed frequency exchange with Nextel. Of the 98 NPSPAC channels licensed to the COUNTY, 46 are licensed on a secondary basis with Mexico. Some of these channels are used at base stations and some are used for

⁵ “Flashport upgrade” means changing the radio’s firmware. If the change cannot be made, the radio must be replaced.

mobile talk-around. Under the consensus plan, only 57 channels are allocated along the Mexican border, resulting in a proposed loss of 41 channels to the COUNTY. Should the 800 MHz rebanding plan be adopted by the FCC, the COUNTY cannot suffer this loss of channels without a reconfiguration of the RCS.

Nextel would be required to fund a new configuration of the RCS Network utilizing simulcast technology to expand channel resources by reuse of frequencies currently in use at 29 stand-alone sites. The cost for this re-configuration is estimated to be over \$9 million.

Cost for CITY and COUNTY Frequency Exchange with Nextel

The proposed frequency exchanges between Nextel Communications and the CITY and the COUNTY would require (1) final analysis of the channel assignments by a qualified consultant selected by the CITY and the COUNTY, (2) coordination of the channel assignments with APCO, (3) licensing of the channels to the appropriate organization(s), and (4) the definition and implementation of the Scope of Work to complete the tasks to accomplish these frequency exchanges. The total cost for an 800 MHz frequency exchange between the CITY and Nextel and the COUNTY and Nextel would need to be paid by Nextel as stated in the Consensus Proposal. Their commitment of the necessary funding to mitigate and/or eliminate harmful interference to public safety would be appropriately spent on this effort. Nextel has already set a precedent for this process through its voluntary frequency exchange with the City and County of Denver, Colorado.

Appendix F

The City and County have conducted a thorough review of the revisions to Appendix F submitted by the Consensus Parties as Attachment 1 of their filing on August 7, 2003. As a result of that analysis the CITY and the COUNTY support Appendix F and encourage the FCC

to put these technical principles in place as a part of any Report of Order that comes out of this docket.

The Balanced Approach Plan

The CITY and the COUNTY have worked closely with the UTC and members of the 800 MHz User Coalition. The CITY and the COUNTY have chosen not to sign on to the Balanced Approach Plan, but feel that many elements of the plan can be useful in resolving public safety interference in the 800 MHz band. Attachment 1 provides a rewritten version of the Balanced Approach Plan that the CITY and the COUNTY feel strengthens the plan and should be considered in Docket 02-55.

CONCLUSION

For the reasons discussed, we ask that the Commission adopt the “San Diego solution” as detailed in this filing. The CITY and the COUNTY believe that until the bilateral agreement with Mexico is revised or some other mechanism equalizes 800 MHz channel availability in the heartland and the border regions, there needs to be a specific, workable solution implemented in San Diego and the CITY and the COUNTY should be exempted from the Consensus Plan rebanding and/or other proposals that do not adequately address the Mexican border area.

Respectfully submitted,

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THEIR ATTORNEYS

Attachment 1

BALANCED APPROACH - SAN DIEGO CITY and COUNTY REVISION

STATEMENT OF PRINCIPLES FOR ADDRESSING 800 MHZ INTERFERENCE

Step 1: Solve interference through mandated mitigation using enhanced best practices. Immediate steps to improve mitigation techniques include:

- All licensees in the 800 MHz band should take proactive steps to ensure that potential interference situations are identified and avoided to the extent possible. Procedures to implement this approach are detailed in Attachment A.I.
- FCC should clarify and codify a policy that entities creating harmful interference to licensees in the 806-824/851-869 MHz band shall be responsible for mitigating the reported interference within 60 days of being contacted by the affected licensee. The cost for resolving harmful interference is the sole responsibility of the interfering licensee.
- This policy would apply even if the interfering licensee/equipment is operating consistent with current FCC rules while causing the interference. Procedures to implement this approach are detailed in Attachment A.II.
- All licensees in the 806-894 MHz band should offer their engineering expertise and assistance to any other licensee trying to resolve an issue of harmful interference. All licensees should consider themselves as stakeholders in identifying incidents of harmful interference in the band, evaluating the problem, offering mitigation advice, and in assisting the implementation of the solution for transmitter- or receiver-caused interference.
- The APCO “Best Practices” recommendations should be enhanced and incorporated into the FCC’s Rules, and all licensees operating in the 806-894 MHz band shall be required to abide by these rules to minimize harmful interference.
- The FCC should adopt modified technical rules to prevent future interference, recognizing many of the technical advances identified in filings by equipment manufacturers. (See Attachment B for further detail on these technical measures).
- The FCC should encourage more flexibility in current user pool eligibility restrictions to allow private market agreements, including frequency swaps, as a means of reducing and preventing interference. The FCC should develop and implement a streamlined process that details the specific actions needed to

accomplish these swaps and these procedures should be included in any Order that results from this proceeding.

- The interfering licensee is solely responsible for the cost of implementing mitigation techniques to resolve harmful interference to incumbent radio systems. Public safety and critical infrastructure licensees shall never be considered as secondary users of frequency spectrum on which they currently have primary status, regardless of whether there is satisfactory alternative spectrum available.

Step 2: Initiate a process whereby licensees in the 806–894 MHz band will resolve individual cases of harmful interference if and only if the mitigation techniques and rule changes outlined in Step 1 do not adequately resolve interference.

- The affected parties contact the Licensing and Technical Analysis Branch (LTAB) of the Wireless Telecommunications Bureau, which is to be responsible for the coordination and review of mitigation techniques.⁶
- The affected parties provide all necessary data of the problem to the LTAB designee.
- The LTAB designee facilitates resolution of the problem. Resolution might include technical solutions, regional frequency exchanges and/or rebanding, frequency swaps, etc.
- The LTAB shall facilitate an agreement among the affected licensees within 120 days of notification.
- Certified 800 MHz frequency coordinators should track and report resolutions on a BBS/e-mail or listserv so that solutions to harmful interference can be shared with others.

Step 3 Initiate a review to assess progress and effects of Step 1 mitigation measures, and to evaluate longer-term measures that might prove necessary *if and only if* these mitigation techniques and rule changes do not adequately resolve interference.

- Assigned LTAB staff will be responsible for facilitating ad hoc meetings of stakeholders who are attempting to resolve harmful interference issues in a

⁶ Due to its expertise on border issues, the City and County of San Diego request that the FCC's San Diego Regional Field Office be involved in such reviews within its territory of responsibility.

timely and cooperative manner, working with a steering committee including all affected stakeholders (a focused industry-Public Safety working group), and should build on /incorporate existing efforts.

- The review should be initiated immediately, and focus first on monitoring and evaluating the track record of the enhanced best practices approach in resolving interference concerns. It should, in addition, examine the nature and extent of any remaining interference problems that are not adequately resolved by the measures in Step 1, and develop concrete recommendations to fix them. The review should be comprehensive, and include recommendations on solutions to avoid specific problems (technical mitigation approaches beyond “Enhanced Best Practices”) as well as broader solutions if interference is not sufficiently mitigated.
- During the review process, all affected 800 MHz band stakeholders will freely contribute engineering expertise and advice to help resolve the harmful interference issue.
- The review should include recommendations on funding of any appropriate remediation measures. Remediation measures should be limited if initial mitigation techniques are as successful as anticipated.

ATTACHMENT A

PROPOSED PROCEDURES FOR INTERFERENCE MITIGATION IN 806-824/851-869 MHz BAND**I. Procedures to Identify and Avoid Incidences of Interference in the 806-824/851-869 MHz band.**

A. Any 806-894 MHz licensee wishing to install new transmitting antennas or equipment at a site designated as a “Low Site” will be required to submit to appropriate FCC-certified frequency coordinators the following data for review 60 days in advance of the installation:

- Licensee Name
- Point of Contact-Information: Name, address, telephone number, and e mail address for technical person knowledgeable about site.
- Site Address and cross street, site coordinates
- Frequenc(ies) of operation, proposed ERP levels
- Certification: The licensee shall certify that it has performed an engineering analysis pursuant to generally accepted industry practices and has determined that its operation of that site is not predicted to cause harmful interference to other licensees within service areas that overlap a 5,000 foot radius around its transmitter site.

This data shall be dated and submitted to a database that is accessible by all parties on the Contact List (see below). Once posted to the database, all contacts with service areas which include the location of the new site shall be sent email notification of the database addition. Any current licensee with concerns of interference shall notify the coordinator and proposing party within 15 days of posting.

Contact List: All parties operating within the 806-894 MHz band will submit contact information, including email addresses, to this list to assure that information is received for their timely review. This contact information will include specific boundaries in which the individual party requires notification. Specific areas could be pre-designated based on political boundaries to simplify the notification process.

“Low-site” transmitters will be defined as follows:

1. Transmitter frequency is in the 851-894 MHz band
2. Transmitting antenna is less than 18 meters AGL, except sites with an HAAT of more than 50 meters.

II. Procedures to Address Identified Interference Problems

A. A 806-824/851-869 MHz licensee receiving harmful interference will immediately notify any suspected interfering low-site system operator or operators of the problem by posting the interference complaint to the e-mail address designated in the Contact List.

The Complainant shall identify:

- Specific geographic location where interference is occurring,
- FCC license information for the Complainant's system,
- Point of Contact Information for the Complainant.

B. All licensees receiving notice of complaint shall respond within three business days and shall confirm whether they have systems operating within 5,000 feet of alleged site of interference. The licensee shall provide the site coordinates, street address or line of sight distance from a landmark or major street intersection, and type of antenna support structure utilized.

C. On-site analysis: The Complainant shall contact the potentially responsible contributors to the interference to arrange for an on-site analysis to take place within five business days (or later at the discretion of the complaining entity). The Complainant and all potential contributors shall support the analysis effort.

D. At the request of the system operator receiving harmful interference, the offending radio transmitters must be removed from service until testing verifies that the harmful interference has been satisfactorily mitigated using these four steps:

1. Turn interfering equipment off or down
2. Mitigate interference
3. Test mitigation
4. Resume operation of equipment.

E. Mitigation steps:

- The offending transmitter(s) shall be turned off or lowered in ERP immediately so the harmful interference is eliminated until such time that a permanent resolution is verified and implemented.
- When the analysis shows that one or more of the suspected interfering operators are actually interfering with the system in question, the contributors to the interference shall correct the interference per industry-standard mitigation

techniques. The resolution of the interference shall be documented and copies provided to each contributor and the complaining licensee.

- If mitigation of interference at a site requires that contributors make changes that can be easily reversed or substantially modified (e.g., changing of transmitter frequencies to avoid intermodulation (“IM”) product formation on a particular frequency, or a reduction in on-street power), then the contributor making the change shall continue to coordinate both with the other contributors and the complaining entity before making further changes to the site.
- If the analysis finds that interference is caused by something other than the equipment belonging to potential contributor system operators (e.g., a bi-directional amplifier (“BDA”) installed by a third party, etc), the owner of the equipment shall be responsible for mitigating the interference. The participants in the on-site analysis shall be responsible for notifying the equipment owner of this finding.

The Complainant shall have a duty to cooperate in the implementation of the most cost-effective solution.

F. If an agreement between the parties is not reached within 60 calendar days after receipt of the written notice of interference, or at any point in which the agreement has been dishonored, any affected party may submit the matter to the FCC for resolution. The FCC shall order appropriate steps to resolve interference in the most efficient manner, including by such means as specifying the transmitter power, antenna height or frequency, or requiring other changes in operation or equipment to correct the problem.

ATTACHMENT B TECHNICAL RULE MODIFICATIONS

The following technical rules, in addition to the requirement, described above, that interfering licensees correct their interference, should be adopted as part of the effort to resolve interference through improved mitigation techniques. The FCC should:

1. Require licensees in the 800 MHz band to comply with the procedures outlined in Attachment A,
2. Codify or amend the regulations as necessary to allow for external filtering and other added equipment to be used to reduce or eliminate interference.
3. Adopt the “APCO Best Practices” recommendation to require that user receiver equipment in the 851-869 MHz band provide a minimum 75 dB intermodulation specification.
4. All base station operations in the 806-824/851-869 MHz band should be subject to a single rules section concerning emission restrictions. The requirements of 47 CFR 90.543 – Emissions limitations, including the ACCP Tables addressing adjacent channel and OOB levels (excepting subparagraph (e)) for 12.5 kHz or wider operations, should, at an appropriate future date, replace the current rules sections dealing with emission masks for various portions of the band, modified as necessary to accommodate bandwidths currently not included in the ACCP Tables. In addition, to implement this standard, 47 CFR 90.691- Emission mask for EA-based systems, and 47 CFR 90.669 - Emission limits for MTA licensees, should be modified to conform to the above standard.
5. Establish adjacent channel spacing standards for use in coordinating non-EA channels, to facilitate the ability of frequency coordinators to review the spacing of channels adjacent to the frequency under consideration, as well as the co-channel spacing, during the coordination process.
6. Any interference that should remain after the implementation of the above measures could be resolved through “Enhanced Best Practices” measures such as careful design or redesign of antenna systems, filters, and other non-transmitter-specific remedies.⁷ Under this proposal, manufacturers would be able to produce equipment usable across the entire band, maintaining economies of scale, encouraging manufacturer involvement and innovation and benefiting the 800 MHz market in general.

⁷ Public safety would expect to be compensated for the expense of such remediation.

Motorola, for example, is testing the use of switchable attenuators in portable receivers to reduce the strength of signals entering the receiver in strong signal areas that would otherwise result in non-linear operation of the low noise amplifier and mixer, creating intermodulation interference.⁸ Motorola also is testing software-controlled tunable filters in its portable receivers that retune the filter based on received signal strength, allowing the portable to operate correctly in the presence of strong CMRS signals. Further, Motorola has written that “All of the deployed dual-band XTS 2500 and XTS 5000 model radios (which began shipping in 4th quarter 2001) are physically capable of implementing this solution, but will require additional software.”⁹

⁸ See Letter to Edmond Thomas, Chief, OET, from Steve Sharkey, Motorola, May 6,

⁹ Id.